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Title: Functional safety in CAN XL: Enabling reliable communication for safety-critical cystems

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Abstract: As automotive and industrial systems demand higher data rates without compromising safety, CAN XL emerges as the next-gen protocol meeting both performance and functional safety requirements. This article explore show DCD-SEMI's CAN XL IP Core addresses ISO 26262 functional safety standards through robust error detection, fault tolerance, and safety mechanisms. We outline key architectural features supporting ASIL requirements, including CRC enhancements, dynamic payload length handling, and redundancy support. Whether applied in autonomous driving, industrial robotics, or medical devices, DCD-SEMI's CAN XL ensures secure, reliable communication where failure is not an option —making it a cornerstone for future safety-critical designs.